



2018 Heliophysics Mission of Opportunity (MO) Pre-Proposal Conference

Overview of the Evaluation, Categorization and Selection Process

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Solicitation Components

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NASA Announcement of Opportunity (AO)

Stand Alone Missions Of Opportunity Notice #3
(SALMON-3)
NNH17ZDA004O

Program Element
Appendix M (PEA-M):
Heliophysics Science
Mission Of Opportunity

Program Element
Appendix L (PEA-L):
Heliophysics Technology Demonstration
Mission Of Opportunity

NMES
New Missions
for Existing
Spacecraft

PMO
Partner Missions
of Opportunity

SCM
Small Complete Missions

SCM
Small Complete Missions

Sub-orbital Class
1. Balloon
2. Suborbital Reusable
Launch Vehicle

1. ISS
2. Hosted Payload
3. CubeSat

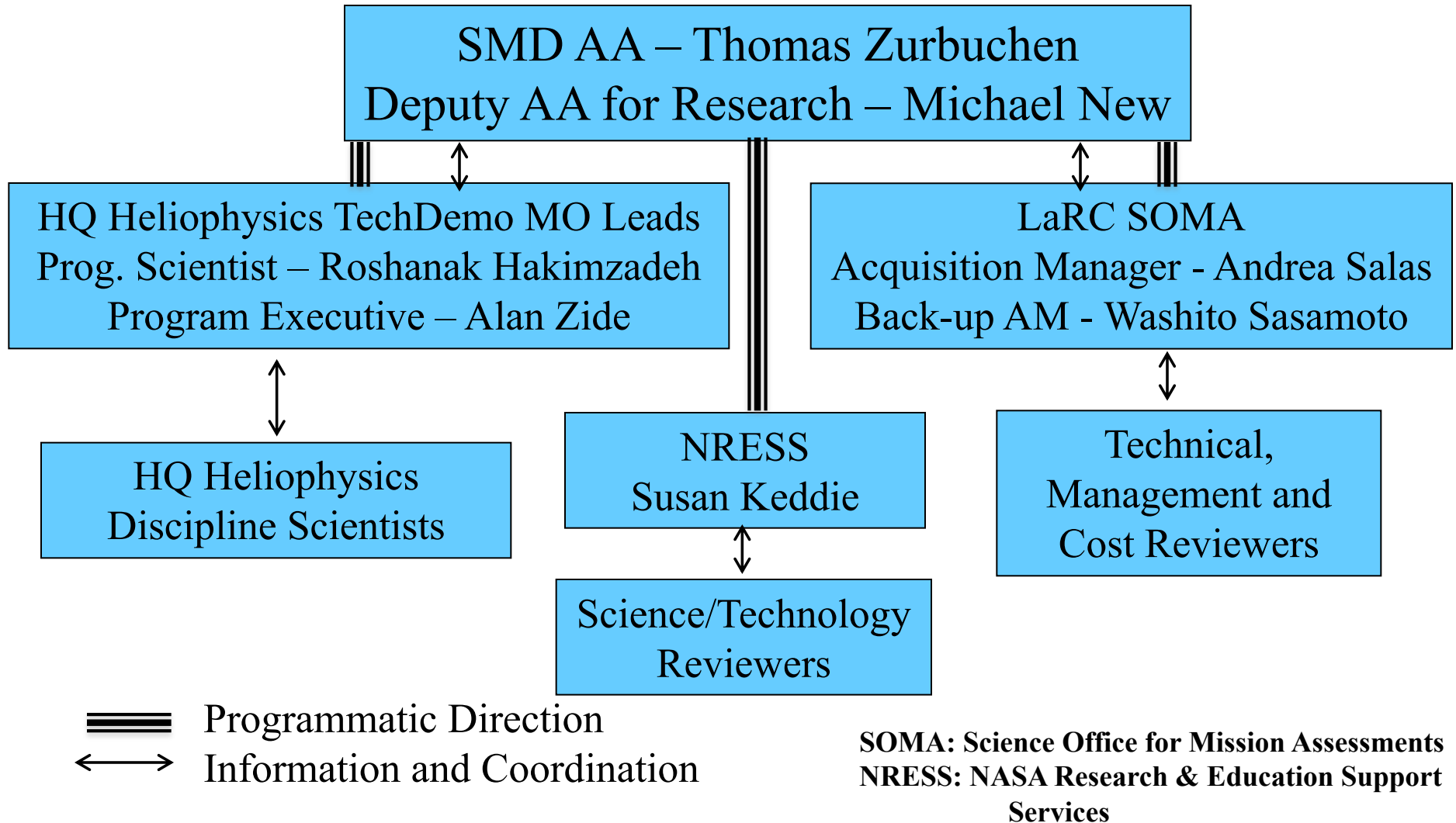
IMAP (STP-5) ESPA

Traditional Explorers Mission of Opportunity



2018 TechDemo MO (PEA-L)

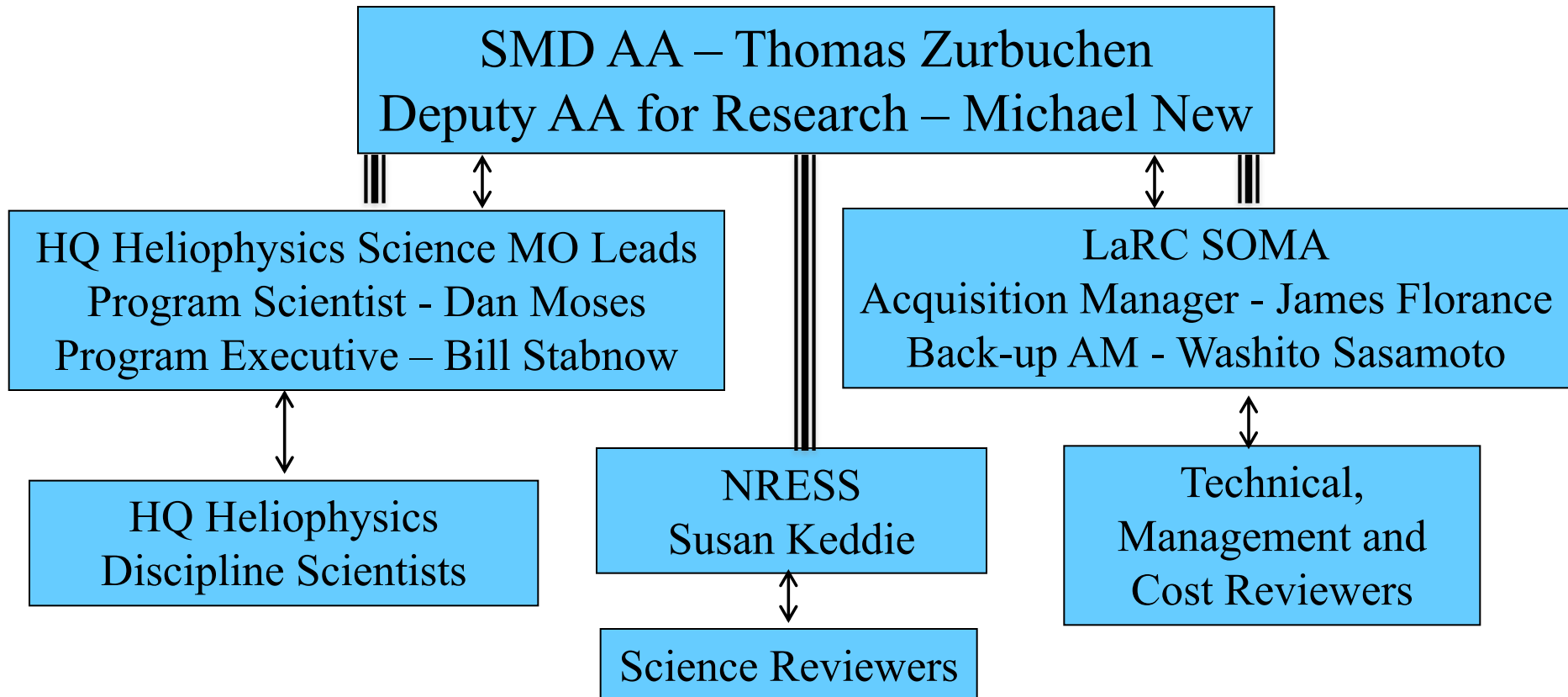
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2018 Science MO (PEA-M)

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≡≡≡ Programmatic Direction
↔ Information and Coordination

SOMA: Science Office for Mission Assessments
NRESS: NASA Research & Education Support Services



Science Office for Mission Assessments Background

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SOMA

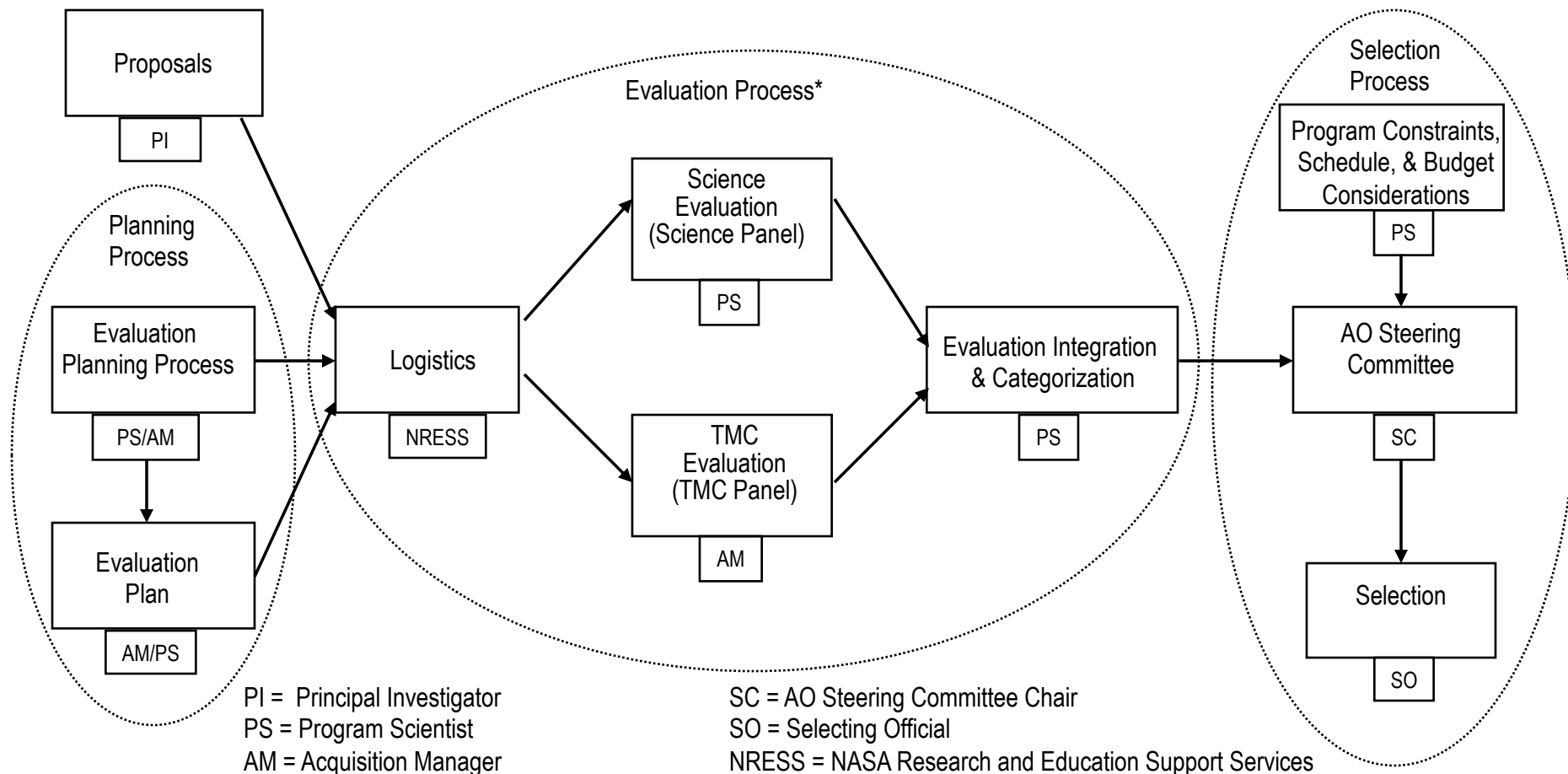
- The NASA Science Mission Directorate (SMD) Science Office for Mission Assessments (SOMA) was established in 1996 to support the Discovery and Explorer Programs, the office now supports also the New Frontiers, Mars Scout, Earth System Science Pathfinder (ESSP), and others.
- The TMC process is a standard process used by SOMA to support all SMD evaluations. Lessons learned from each evaluation are incorporated into the process for continuous improvement.



NASA SMD

Processes and Responsibilities

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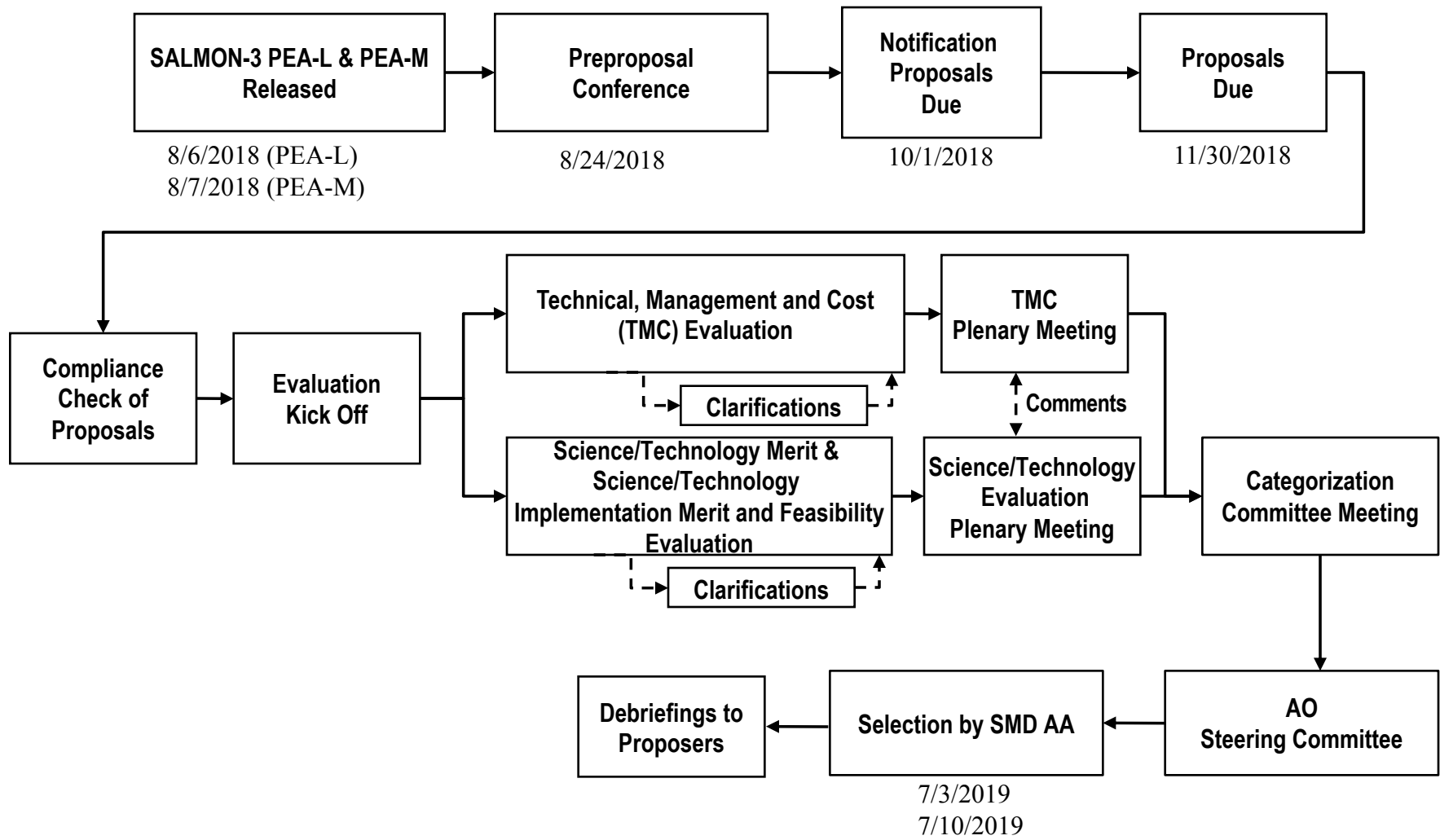


* The Evaluation Process is addressed in this document.



Evaluation, Categorization & Selection Process

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Heliophysics MO Requirements

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- **2018 Heliophysics MO program element solicitations are appendices to the SALMON-3 AO.**
 - Two documents (PEA & SALMON-3) contain the requirements for each MO
- **Requirements are as given in SALMON-3, as amended by the PEAs.**
- **Evaluation Factors** determining criteria rating are identified, numbered, and specific.
 - Factor A: 4 for Science/Technology Merit (SEO Merit is not used in criterion rating)
 - Factor B: 5 for Science/Technology Implementation Merit and Feasibility (SEO Merit is not used in criterion rating)
 - Factor C: 5 for Technical, Management, and Cost (TMC) Feasibility
- SALMON-3 Appendix B has requirements on **Proposal Preparation** that are amended by PEAs
- **Requirements provided in a given PEA supersede that provided in SALMON-3**



Heliophysics MO PEAs

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In the event of an apparent conflict between the guidelines in the PEAs and SALMON-3, the order of precedence is:

1. the PEA,
2. then the SALMON-3 AO,
3. then SALMON-3 Appendix B,
4. then SALMON-3 Appendix A.



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- The 2018 Heliophysics MO investigations will be evaluated and selected through a two-step competitive process.
- Step 1 is the solicitation, submission, evaluation, and selection of proposals prepared in response to this AO.
- As the outcome of Step 1, NASA intends to select up to 5 MO SCM proposals for the IMAP ESPA flight opportunity (combined Science and TechDemo) and up to two Explorers-class MO proposals to proceed to a Phase A concept study and submit Concept Study Reports to NASA.
- Step 2 is the preparation, submission, evaluation, and continuation decision (downselection) of the Concept Study Reports.
- As the outcome of Step 2, NASA intends to select two or more MO SCM proposals for the IMAP ESPA flight opportunity (combined Science and TechDemo) investigations and one or more Explorers-class MO proposals to proceed into Phase B and subsequent mission phases.
- **Important note:** the selection intentions expressed on this page reflect current planning but are subject to change and thus are not binding commitments by NASA.



Evaluation, Categorization, and Selection Process

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- All proposals will be initially screened to determine their compliance to requirements and constraints of the applicable AO
- Compliant proposals will be evaluated against the criteria specified in Section 7.2 of the SALMON-3 AO, as modified by the respective PEA, by panels of individuals who are peers of the proposers.
- Proposals will be evaluated by more than one panel (e.g., a science panel and a technical/management/cost panel); the panels evaluate proposals against different criteria.
- These panels may be augmented through the solicitation of non-panel (mail in) reviews, which the panels have the right to accept in whole or in part, or to reject.
- During the evaluation and selection process, NASA may request clarification of specific points in a proposal.
- Before finalizing the evaluation of the feasibility of the mission implementation, NASA will request clarification on all potential major weaknesses in the *feasibility* of mission implementation that have been identified in the proposal (Factors B&C).



Evaluation



Evaluation Criteria

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1. Science/Technology Merit of the Proposed Investigation
2. Science/Technology Implementation Merit and Feasibility of the Proposed Investigation
3. TMC Feasibility of the Proposed Mission Implementation, Including Cost Risk

Weighting:

Criterion #1 is weighted $\approx 40\%$;

Criteria #2 and #3 are weighted $\approx 30\%$ each.



Evaluation Criteria

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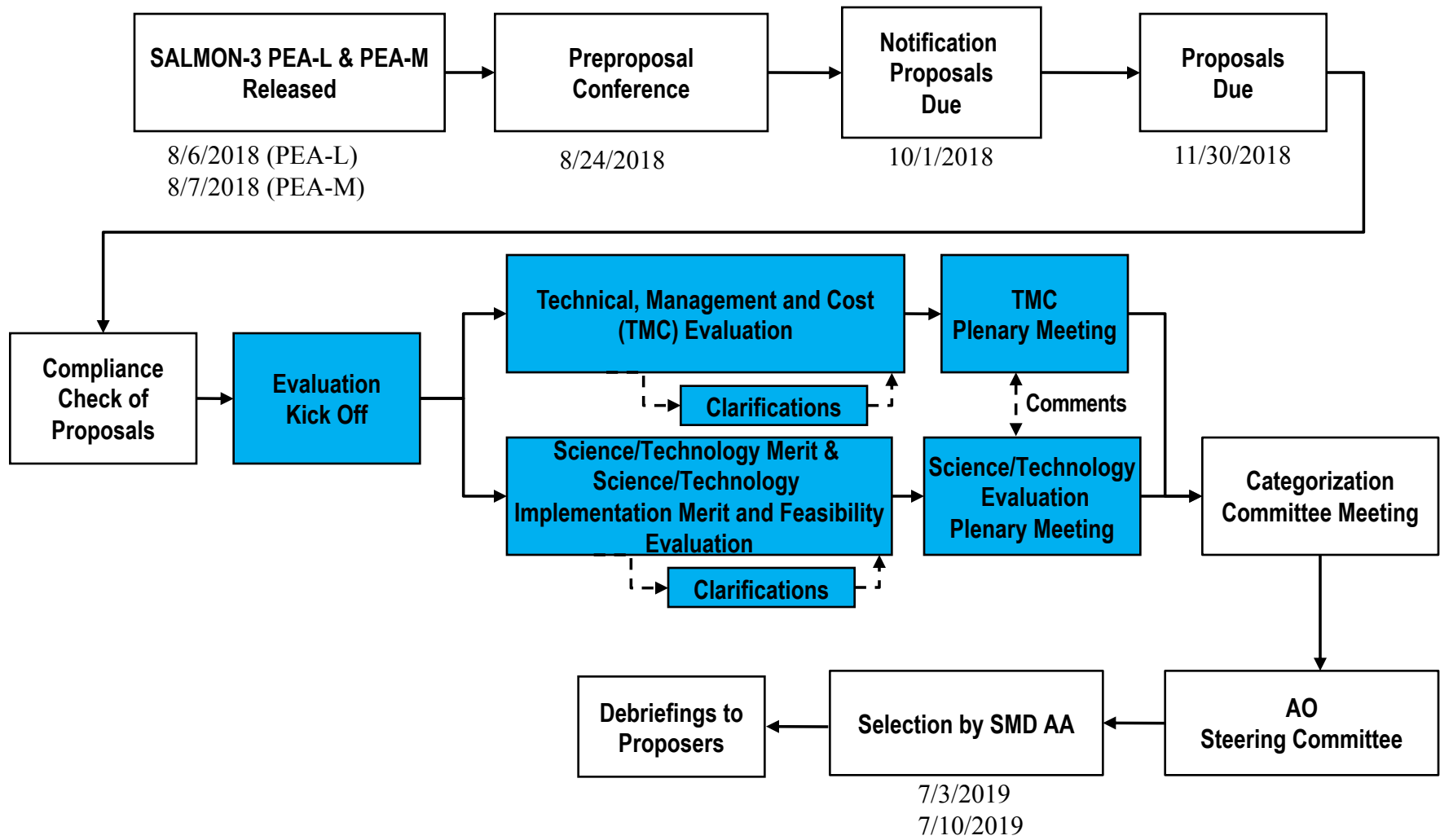
1. Science Merit evaluation criteria are stated in the AO Sections 7.2.2
2. Science Implementation evaluation criteria are stated in the AO Sections 7.2.3
3. TMC evaluation criteria are stated in the AO Sections 7.2.4:

Those proposing to the 2018 Heliophysics MOs must address both the SALMON-3 AO and the relevant Heliophysics MO PEA. Proposals must comply with the requirements, constraints, and guidelines contained within both the AO and the respective PEA. Note that the numbering of the SALMON-3 sections do not necessarily match the numbering of corresponding PEA sections.



Evaluation, Categorization & Selection Process

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Evaluation Clarifications

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- **NASA will request clarification of Potential Major Weaknesses (PMWs) that have been identified by the evaluation panels**

1. TMC Feasibility of the Proposed Mission/Investigation Implementation and
2. Scientific Implementation Merit and Investigation Feasibility .

- **The form of the clarifications is strictly limited to a few types of responses:**

1. Identification of the locations in the proposal (page(s), section(s), line(s)) where the potential major weakness is addressed
2. Noting that the potential major weakness is not addressed in the proposal.
3. Stating that the potential major weakness is invalidated by information that is common knowledge and is therefore not included in the proposal.
4. Stating that the analysis leading to the potential major weakness is incorrect and identifying a place in the proposal where data supporting a correct analysis may be found.
5. Stating that a typographical error appears in the proposal and that the correct data is available elsewhere inside the proposal.

The PI will be given at least 24 hours to respond to the request for clarification. Any response that goes beyond a clarification will be deleted and will not be shown to the evaluation panel.

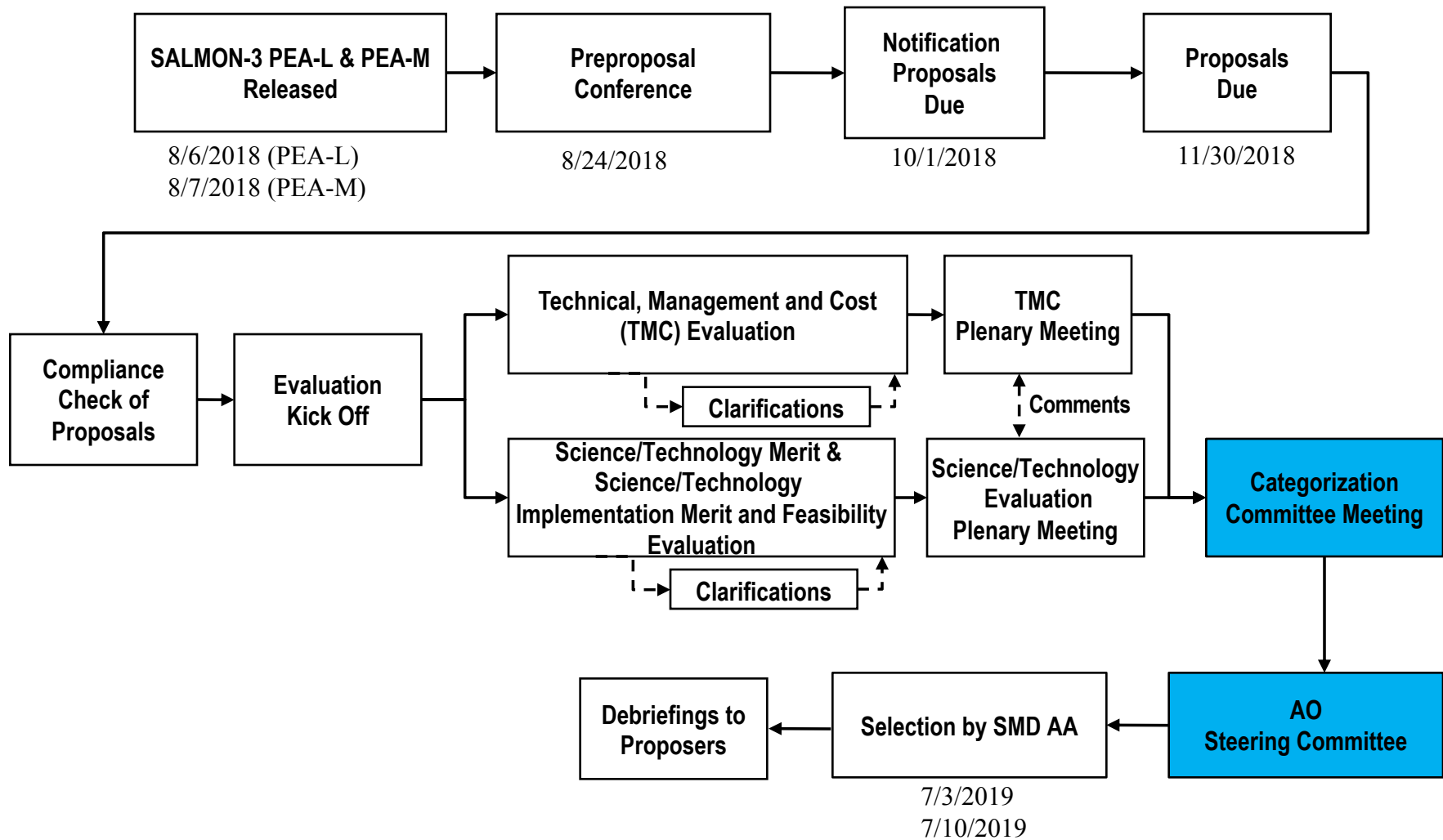


Categorization



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Categorization

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Upon completion of the evaluations, the results are presented to the Categorization Committee, composed wholly of Civil Servants and Intergovernmental Personnel Act appointees (some of whom may be from Government agencies other than NASA) and appointed by the Associate Administrator(s) for the appropriate Mission Directorate(s).

This committee will consider the peer review results and, based on the evaluations, will categorize each proposal according to procedures required by NFS 1872.403-1(e). The categories are defined as:

- Category I. Well-conceived and scientifically and technically sound investigations pertinent to the goals of the program and the AO's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and data that can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.



Categorization (2)

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- Category II. Well-conceived and scientifically or technically sound investigations which are recommended for acceptance, but at a lower priority than Category I.
- Category III. Scientifically or technically sound investigations, which require further development. Category III investigations may be funded for development and may be reconsidered at a later time for the same or other opportunities.
- Category IV. Proposed investigations which are recommended for rejection for the particular opportunity under consideration, whatever the reason.



Evaluation Process Conclusion

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- Once Categorization has been completed, the Evaluation is considered complete unless questioned by a subsequent Steering Committee review.
- The AO Steering Committee will conduct an independent assessment of the Evaluation and Categorization processes regarding their compliance to established policies and practices, as well as the completeness, self-consistency, and adequacy of all supporting materials.

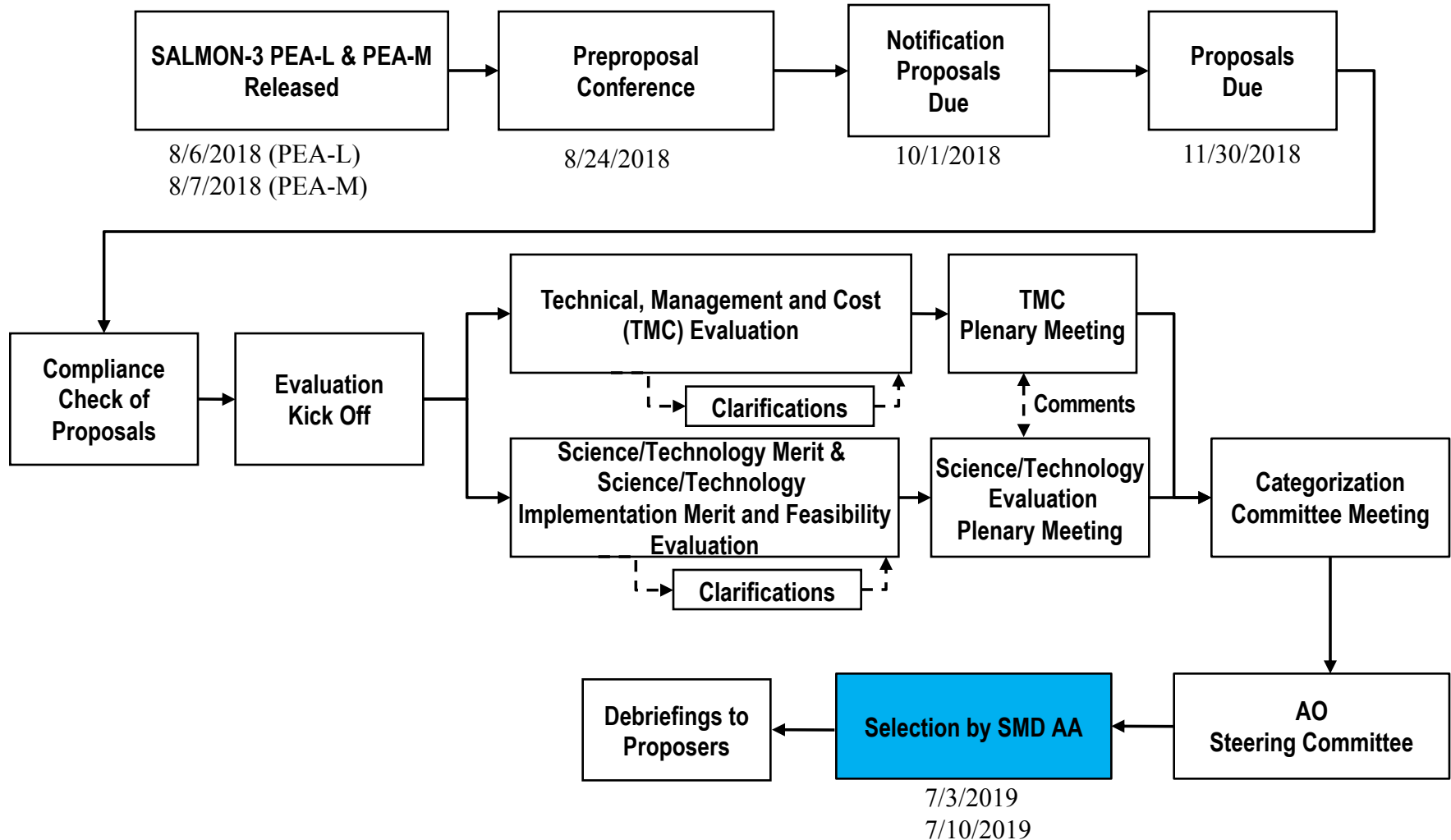


Selection



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Selection Factors

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- As stated in Section 7.3 of the AO, the Selection Official may take into account a wide range of programmatic factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the mission directorate(s).